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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/915,678	07/26/2001	Dmitri Loguinov	US 010343	7605

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EXAMINER	
NGUYEN, TRONG NHAN P	
ART UNIT	**PAPER NUMBER**
2152	

DATE MAILED: 01/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/915,678	LOGUINOV, DMITRI	
	Examiner	Art Unit	
	Jack P Nguyen	2152	

-- The MAILING DATE of this communication app ars on the cover sheet with th correspondenc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 July 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 July 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/15/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-24 are being examined.

Drawings

New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the drawings are difficult to read and the labels are unclear. Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Figures 1a and 1b should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claim 7 is objected to because of the following informalities: control action is incorrectly labeled 'CC'. For the purpose of examination, Examiner assumes the correct label to be 'CA'. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3-4, 6-7, 9, 11-12, 14-16, 19-21, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marin et al, 5,936,940 (Marin hereafter) in view of Applicant admitted prior art (Applicant hereafter).

As per claim 1, Marin teaches a method for adjusting a sender rate in a packet communication system to support congestion control between a server and a client (abstact), the method comprising the steps of: (a) transmitting a plurality of data packets to said client (col. 4, lines 66 – col. 5, lines 2; each node can function as client (receiving node) or server (source node) depending on the situation; data is routed between the nodes); determine and retransmit lost packets (col. 1, lines 49-51; from prior art); (d) computing a new sender rate based on a round-trip time (RTT) corresponding to a latency between sending response packet to said server and receiving the corresponding transmission of packet from said server (col. 12, lines 34-38; col. 6, lines 30-34; col. 6, lines 66 – col. 7, lines 6; col. 7, lines 8-13; RTT is computed based on latency network topology data obtained by the source sending packet data to the destination and getting an acknowledgement from the destination to determine the latency time of the packets); and, (e) transmitting said new sender rate to said server if a predetermined number of said RTTs is detected thereafter during said communication

connection (col. 7, lines 17-22). Marin does not explicitly disclose determining by said client whether one of said data packets is lost over a communication connection from said server to said client; transmitting a response packet for retransmission by said client if one of said data packets is lost. However, Applicant discloses for the client once determined lost data packet has taken place to send a negative acknowledgement (NACK) to the server in response to lost data packets for the retransmission of lost data packets (page 1, paragraph 0005). Hence, it would have been obvious to one of ordinary skill in the art to be motivated to have the client send NACK messages in response to lost packets so the sender can retransmit the lost data packets.

Claims 9, 16, and 21 are rejected for similar reasons as claim 1 addressed above. Marin further teaches successively transmitting a number of response packets responsive to the plurality of said data packets containing said new sender rate (col. 7, lines 17-22; using new rate computed from ACK data, server sends subsequent data packets to client); adjusting by said server, said new sender rate if said RTT is calculated more than a predetermined threshold value (col. 13, lines 19-24 & lines 36-44; if RTT exceeds threshold (predetermined) value, traffic congestion is detected. New rate is being adjusted to alleviate traffic congestion); client notifies server with an ACK (includes latency time with any threshold value) message; server then re-adjusts the rate based on the ACK data to reflect the changes in network traffic (col. 7, lines 17-22; col. 13, lines 19-24; threshold value can be set by suspend timer). Marin does not explicitly teach notifying said new sender rate to server based on lost packet (NACK response) if said RTT is calculated more than a predetermined threshold value. Hence,

it would have been obvious to one of ordinary skill in the art to be motivated to introduce a variation of the Marin teachings by having the client computing and sending a new sender rate to the server based on NACK response (instead of the server computing and re-adjusting the sender rate) when the RTT exceeds a predetermined value because it would allow the system to quickly respond to changing network traffic resulted by lost data packets.

As per claims 3 and 11, Marin teaches communication connection between said server and said client comprises a wired communication link (col. 4, lines 42-43).

Claims 4 and 6 are rejected by similar reasons as claim 1. Marin further teaches client sends a number of acknowledgment (ACK) messages, in response to the plurality of said data packets, said new sender rate specifying a transmission rate at which said server may transmit subsequent data packets to said client (col. 7, lines 8-17; client sends ACK messages to server; ACK messages include data that server will use to adjust the rate of future messages); and, adjusting by said server, in response to said acknowledgment messages, said new sender rate at which said server sends subsequent data packets to said client (col. 7, lines 17-22; server uses data from ACK messages to adjust the rate of future messages sent to client).

As per claim 7, Marin teaches client sending control action (CA) packet (via ACK message) to server regarding data to assist server in adjusting new sender rate as stated in claims 4 and 6 above. Marin does not explicitly disclose response packet is one of a negative acknowledgment (NACK) packet. However, it is well known in the art and also disclosed by Applicant (see claim 1 above) that NACK packet functions in

similar way as ACK packet wherein a NACK packet is used to indicate a packet that was not lost or dropped during transmission.

Claims 12, 14, and 20 are rejected for similar reasons as claims 4 & 6 above.

Claims 15, 19, and 24 are rejected for similar reasons as claim 7 above.

Claims 2, 5, 8, 10, 13, 17-18, and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marin et al, 5,936,940 (Marin hereafter) in view of Wilson, US Pub 2001/0032269 (Wilson hereafter).

As per claims 2 and 5, Marin teaches calculating the round trip time (RTT) based on the time delay when a packet is being sent from the source to the destination and receiving an acknowledgement back at the source from the destination (col. 12, lines 34-36; see reference to claim 1 above). Marin does not explicitly disclose transmitting a first packet having an RTT sequence number to said server if one of said data packets is lost; determining by said client that one of said data packets is lost if said RTT sequence number received from said server is out of order; receiving a second packet containing said lost packet in response to said first packet from said server. However, Wilson teaches transmitting first packet having a sequence number to said server if one of said data packets is lost; determining by client that one of said data packets is lost if said packet sequence number received from said server is out of order or missing; receiving a second packet containing said lost packet in response to said first packet from said server (page 5, paragraph 0044). Hence, it would have been obvious to one of ordinary skill in the art to be motivated to modify and combine the teachings of Marin

and Wilson to calculate the RTT by measuring the time delay between the transmission of the data packets between the sender and receiver.

As per claim 8, Marin does not explicitly disclose computation of said new sender rate is based on a packet loss ratio. However, Wilson discloses sender rate is determined by loss packet due to network congestion (page 9, paragraph 0073; when a packet failed to send a response in a set time, the packet is timed out and considered lost.) Hence, it would have been obvious to one of ordinary skill in the art to be motivated to modify the teachings of Marin and Wilson to compute the sender rate based on the packet loss ratio in order to minimize future data loss by adjusting the transmission rate of the packets.

Claims 10, 13, 17, and 22 are rejected for similar reasons as claim 2 & 5 above.

Claims 18 and 23 are rejected for similar reasons as claims 4 and 5 above.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Borella et al, 6,643,259; Vaid et al, 6,047,322 ; Omura et al, 6,430,620 ; Ogus, 6,587,875 ; Rhee, 6,421,387 ; Chiu et al, 6,505,253 ; Zhu et al, 6,085,252 ; Ghose et al, US Pub 2002/0004842 ; Aimoto et al, 6,144,636

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack P Nguyen whose telephone number is (571) 272-3945. The examiner can normally be reached on M-F 8:30-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton Burgess can be reached on (571) 272-3949. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jpn

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